



JUL 15 1997

MEMORANDUM TO: The Record

FROM:

jd Hilda Diaz-Soltero *Mantzaris*
Director
Office of Protected Resources

SUBJECT:

ESA Section 7 Consultation on Implementation of the Atlantic Large
Whale Take Reduction Plan
GARFO-1997-00001

A. Background:

As a result of the 1994 amendments to the Marine Mammal Protection Act (MMPA), NMFS was required to develop take reduction plans for marine mammals in all Category I and II fisheries. These teams were expected to develop take reduction plans that would mitigate bycatch of all strategic stocks of marine mammals, including ESA-listed marine mammals (i.e., right whales, humpback whales, sperm whales, and fin whales) in these fisheries (see section 118 of the MMPA at 16 U.S.C. 1387 for further discussion).

The purpose of a Take Reduction Plan (TRP) under the MMPA is to reduce, within six months of its implementation, the incidental mortality or serious injury of strategic marine mammal stocks in fisheries to levels below the potential biological removal (PBR) level established for each stock (short-term goal). The long-term goal of the TRP is to reduce, within five years of its implementation, the incidental mortality or serious injury of marine mammals incidentally taken during commercial fishing operations to insignificant levels approaching a zero mortality and serious injury rate, taking into account the available existing technology, the economics of the fishery, and existing State or regional fishery management plans. The Atlantic Large Whale Take Reduction Team (ALWTRT) was formed on August 6, 1996, because of interactions between strategic stocks of large whales and pot and gillnet fisheries in the western Atlantic. The shark gillnet component of the Atlantic Pelagic Fishery was considered by the ALWTRT, but the swordfish and tuna driftnet and longline components and the shark longline component of the Atlantic Pelagic Fishery were considered by the Atlantic Offshore Cetacean Take Reduction Team (AOCTRT) and will be addressed in a separate consultation.

Although the ALWTRT did not reach consensus on a TRP, a document describing the ALWTRT deliberations was submitted to NMFS on February 1, 1997 and NMFS published a proposed rule and TRP on April 7, 1997 (62 FR 16519-16538) in accordance with MMPA requirements. The ALWTRT did reach agreement on many, but not all portions of the draft plan.

File 1514-05A ^{NMFS} Atlantic Large Whale Take Reduction Plan

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(1) History of Related Consultations and Take Reduction Actions

Concurrent to activities being conducted by the TRT process, other Endangered Species Act (ESA) activities have been occurring that have a bearing on the environmental baseline context upon which this Biological Opinion for the ALWTRP is based. Two formal reinitiations of consultation have been conducted on the lobster and multispecies fisheries to address potential impacts on large whales and sea turtles. In addition, other consultations and actions have taken place, and are continuing to occur, which address mortality factors other than fishing related mortality. This is particularly important to establishing the current environmental baseline, which has been improved by positive strategies to reduce serious injury and mortality to large whales from all sources. These strategies have been implemented since the US Coast Guard (USCG), US Navy (USN), and the lobster and multispecies fishery management plan (FMP) Biological Opinions were issued.

(a) ESA Section 7 Consultations:

***US Navy, Mayport operations.** This Biological Opinion, issued May 15, 1997 (incorporated herein by reference), concluded that USN operations out of Mayport, Florida were not likely to jeopardize the continued existence of any endangered or threatened species under NMFS jurisdiction because of the measures being implemented by the Navy to minimize the potential to adversely affect the northern right whale. The actions taken by the USN change part of the environmental baseline as it existed prior to 1997 because of considerable efforts by the USN to modify vessel and aircraft operations in order to reduce impacts to the northern right whale, particularly in its critical habitat (calving area) off of the Georgia/ Florida coastline. These protective measures were developed through discussions between the Navy and NMFS (for a complete description see the May 15, 1997, Biological Opinion). The May, 1997, Biological Opinion noted that of the seven right whale mortalities documented as an unusual mortality event in 1996, six occurred in the waters adjacent to the calving grounds. While none of these deaths were directly attributable to USN activities, at least one of the whales showed signs of massive acute trauma, consistent with a vessel collision. In addition, a necropsy report from another right whale of that group noted that the amount of fracturing in the ears was "unprecedented" and could have been a result of a blast or a ship strike. Therefore, the potential impact on these animals in the Georgia/Florida critical habitat from an entity (USN) that has significant vessel activity in the area has been reduced. No mortality events similar to 1996 occurred in the Georgia/Florida calving ground area during the winter of 1997.

***US Coast Guard Vessel and Aircraft operations.** The initial Biological Opinion was issued September 15, 1995, and a reinitiated Biological Opinion was issued July 22, 1996 (incorporated herein by reference). The re-initiation occurred as a result of a suspected whale strike by a USCG vessel in October 1995. The previous Biological Opinion required reinitiation of consultation if any interactions occurred between USCG vessels and endangered large whales. As a result of the two biological opinions mentioned above and efforts that had begun prior to 1995, the USCG embarked on development and implementation of an extensive Atlantic Living Marine Resources

Program (ALMRP) which, as for the mitigation measures adopted by the USN, included considerable efforts by the USCG to modify vessel and aircraft operations in order to reduce impacts to the northern right whale, particularly in its critical habitat off of the Georgia/ Florida coastline, and the critical habitats in the Great South Channel and Cape Cod Bay, Massachusetts. This also represents a change in the environmental baseline as it existed prior to 1997, because the USCG has had time to implement proposed measures in the Reasonable and Prudent Alternative (R&PA) in the Biological Opinion and additional initiatives in the Atlantic Living Marine Resource Initiative (see the Environmental Assessment and Biological Opinion for the ALMRP for further detail). The USCG has been instrumental in providing a platform for survey flights for the early warning system off of Cape Cod and in assisting the response to reported large whale entanglements. No interactions between endangered species with USCG vessels have been reported since the 1995 incident.

*American Lobster FMP. A reinitiated Biological Opinion on fishing conducted under the American Lobster Fishery Management Plan was issued December 13, 1996 (incorporated herein by reference). This Biological Opinion concluded that fishing under the current Fishery Management Plan (FMP), including anticipated management actions over the next six months, were likely to jeopardize the continued existence of the northern right whale, but were not likely to jeopardize any other endangered or threatened species under NMFS jurisdiction. As a result of the R&PA of this Biological Opinion, an emergency regulation under the authorities of the Marine Mammal Protection Act (MMPA) (Emergency Interim Final Rule, 62 FR 16108-16112) was published that implemented restrictions on the use of lobster pot gear in the federal portion of the Cape Cod Bay right whale critical habitat from April 1, 1997, through May 15, 1997, and in the Great South Channel right whale critical habitat from April 1, 1997, through June 30, 1997. Until gear modifications or alternative fishing practices that minimize the risk of entanglement or reduce the likelihood that an entanglement will result in serious injury or mortality are developed or approved, these closures remain in effect. Since the ALWTRT was still working on gear modification concepts, and the unusual mortality event (seven right whale mortalities) in 1996 cast doubt on the sustainability of this critically endangered species, emergency closure was considered the only current alternative to prevent the risk of jeopardizing the northern right whale during the spring of 1997. The Commonwealth of Massachusetts implemented a similar closure in the state waters of Cape Cod Bay critical habitat. The other component of the R&PA tasked NMFS to analyze fishing effort and whale distribution in order to avoid clumping fixed gear effort in high risk/overlap areas and/or sensitive whale areas. Coordination with the states has begun to analyze fishing effort data, but models to predict shifts in effort have not yet been developed. This alternative is a long-term measure, which in combination with the closures as short-term measures, and in combination with an expanded disentanglement response network capability to deal with a random interaction should it occur, brought the impact of the fishery to below the jeopardy threshold for right whales.

The Gulf of Maine/US mid-Atlantic lobster trap/pot fishery is a Category I fishery under the definitions found in Section 118 of the MMPA, which has an historical incidental bycatch of right, humpback, fin, and minke whales.

***Northeast Multispecies Fishery** . A reinitiated Biological Opinion on fishing conducted under Amendment 7 to the Multispecies Fishery Management Plan, issued December 13, 1996 (incorporated herein by reference), concluded that the current and anticipated actions under this FMP were likely to jeopardize the continued existence of the northern right whale, but were not likely to jeopardize any other endangered or threatened species under NMFS jurisdiction. The R&PA components were designed to be short- term measures to prevent jeopardy, relying on TRT process to provide longer term solutions to the bycatch problem when the plan was completed in July 1997. As a result of the R&PA of this Biological Opinion, NMFS worked with the New England Fishery Management Council, through its FMP Amendment process, to reduce the possibility of entanglement of northern right whales in multispecies fishing gear by implementing Framework Adjustment 23 to the FMP under the authority of the Magnuson-Stevens Fishery Management and Conservation Act: "Gillnet closures to protect right whales in critical habitat" (62 FR 15425-15428). This rule closes federal waters to vessels fishing with sink gillnet gear and other gillnet gear capable of catching multispecies, with the exception of single pelagic gillnets, in parts of the following right whale critical habitat areas: Cape Cod Bay from March 27, 1997, through May 15, 1997, and from January 1 through May 15 in subsequent years; and the Great South Channel from April 1 through June 30 annually. Concurrently, the Commonwealth of Massachusetts has prohibited gillnets from the designated right whale critical habitat in Cape Cod Bay within state waters from January 1 through May 15.

In addition to Framework Adjustment 23, which was designed specifically to protect right whales in their critical habitat during their times of highest use, other closures are in effect under the multispecies plan for purely fishery management reasons and for harbor porpoise protection (see Amendment 7 to the Multispecies FMP and the chart in Appendix (A) for further detail. Note that the Massachusetts Bay Closure Area (3/01 -3/30) and the Cape Cod South Closure Area (3/01-3/30) and the year round closures in the Nantucket Lightship Area and Closed Area I are also likely to benefit right whales and reduce entanglement potential during spring. The latter two would be expected to decrease potential interactions with other large whales during other times of the year.

The Gulf of Maine sink gillnet fishery is a Category I fishery that has an historical incidental bycatch of humpback, minke and possibly fin whales. This gear type has been documented to take right, humpback, fin and minke whales in Canadian waters, although entanglements of right whales in unspecified gillnets have been recorded historically for US waters. The mid-Atlantic coastal gillnet fishery is a Category II fishery that has an historical incidental bycatch of humpback whales.

***Atlantic Pelagic Fishery**

The Atlantic Pelagic Fishery for swordfish, tuna and shark was the fifth consultation initiated to address the severely depleted status of the northern right whale and the potential serious injury and mortality from gear used in these fisheries. The Biological Opinion concluded that continued operation of the driftnet component for swordfish, tuna, and shark is likely to jeopardize the continued existence of the northern right whale primarily due to the gillnet fishery for shark. This

fishery takes place during the time when right whales are present in the calving grounds of right whale critical habitat off Georgia and Florida. One report potentially linking a right whale mortality to the shark driftnet fishery occurred off the coast of Florida near Jacksonville. The gear observed on a right whale calf was consistent with the shark fishery operating in the area at the time. The southeastern US Atlantic shark gillnet fishery is categorized as a Category II fishery. Therefore, one of the primary R&PA of the Biological Opinion was a closure of right whale critical habitat in the southeast to shark gillnet fishing. In another incident, a right whale has been observed taken in the offshore driftnet fishery for swordfish in the northeast. However, the Biological Opinion concluded that the probability of an interaction with this fishery in the offshore area, where the northeast segment of this fishery generally operates, is remote since right whales are not known to be distributed in this area with any frequency. Other recommendations included educational workshops for fishermen, implementation of a limited access system, elimination of the derby nature of the northeast swordfish segment, and 100% observer coverage (an observed take would close the fishery). The action agency has not decided which alternative will be implemented, but the fishery has ceased operating under an emergency closure begun in December, 1996 which extended through May 31. This closure has been extended to continue for another six months until a course of action on the alternative is decided. Nevertheless, the fact remains that the fishery in the NE is currently not operating and, consequently, the threats are currently not part of the cumulative impact.

(b) New England Whale Recovery Plan Implementation Team (NEWRPIT) and Southeastern US Implementation Team for the Recovery of the Northern Right whale (SEUS IT)

Other than fishing related mortality, the most significant human-induced injury and mortality to large whales, particularly the northern right whale, is from ship strikes. The SEUS IT has developed a "Partnering Effort" with the USCG, port Authorities, harbor pilots, and naval facilities to continue and improve (1) the Early Warning System in the SEUS (operating within and adjacent to the winter calving area from Savannah, GA to Sebastian Inlet, Florida from December 1 through March 31), (2) the established public sightings network, and to continue and (3) the established communications network and standard operating procedures by/for each port within and adjacent to the calving area critical habitat. A partnering team allows a collaborative decision making process and use of maximum resources belonging to each stakeholder to achieve shared objectives. This network has already achieved many successful diversions of shipping traffic to avoid right whales, thus significantly decreasing the threat of vessel collision in the southeastern critical habitat area.

The NEWRPIT has a ship-strike committee that is working towards ways to reduce this source of mortality. The Team is also considering international tools that may be available to interact with the commercial shipping community on the whale strike issue, but in the meantime has developed an implementation strategy to deal with this factor for US vessels. The first goal was establishment of the Early Warning System, similar to the one already effectively implemented in the southeast. The system was set up by February 1, 1997 and continued throughout the peak northern right whale activity period. The frequency of surveillance will decrease as the main

concentrations of right whales leave the critical habitat areas for the summer. The group that developed the information sharing system making sightings available to ships active in the high use areas included the Stellwagen Bank National Marine Sanctuary (SBNMS), New England Aquarium, Massachusetts Environmental Police, USCG, Center for Coastal Studies, NMFS/Northeast Fisheries Science Center, Army Corps of Engineers, and Massport. Results from this first year of operation will be reviewed by the team to see where it may need improvement, but the network was operated successfully and no doubt diverted potential collisions. Again, as for the SEUS IT, a partnering team allows a collaborative decision making process and use of maximum resources belonging to each stakeholder to achieve shared objectives. This network has already achieved many successful diversions of shipping traffic to avoid right whales, thus significantly decreasing the threat of vessel collision in the southeastern critical habitat area. The network information was used by the USN and NMFS to determine if operations could occur near the critical habitat areas. Since the network supplied information on whales still located in the area, the USN postponed their military exercise until a later time period.

A Ship Strike Workshop was held by the NEWRPIT in December 1996 that provided an outreach and education vehicle to inform the shipping community of their need to participate in efforts to reduce the northern right whale ship-strike mortality concerns. In addition, research was summarized on current efforts to use new shipboard and moored technologies as deterrents and a report was given on ship design studies currently being conducted by the New England Aquarium and Massachusetts Institute of Technology (MIT). This workshop increased awareness among the shipping community and has further contributed to reducing the threat of ship strikes on right whales. In addition, a Cape Cod Canal Tide Chart was distributed widely to professional mariners and ships passing through the canal that included information on critical habitat areas and the need for close watch during peak right whale activity. A radio warning transmission was also transmitted by Canal traffic managers to vessels transiting the Canal during peak Northern right whale activity periods. Follow-up meetings were held with New England Port Authority and pilots to notify commercial ship traffic to keep a close watch during peak right whale movement periods.

A number of ongoing studies are also adding to our knowledge base so that further management measures are expected to be available in the near future. These include assessment of ship traffic in high risk areas, ship modeling studies, whale data analysis (mortality summaries, scarification analysis), whale detectability study in the SE, SE shipping characterization, Great South Channel marine mammal cruises, ship-strike risk assessment, and assessment of acoustical tools to alert northern right whales of passing ships. In addition "wheelhouse cards" have been distributed to states for distribution to all state fishery permit holders.

B. Proposed Action

The ALWTRP requires measures to be implemented by the anchored gillnet and lobster fisheries that will provide continued protection to right whales, as well as other large whale species, in

addition to, or as alternative measures to, those required under the auspices of the existing ESA Section 7 consultations on these fisheries (as discussed in the biological opinion). The purpose of the ALWTRP is to reduce the bycatch of several large whale stocks that occur incidental to fishing for multiple groundfish species, including monkfish and dogfish, in the Gulf of Maine sink gillnet fishery; for multiple species in the US mid-Atlantic coastal gillnet fishery; for lobster in the Gulf of Maine, and in the US mid-Atlantic lobster trap/pot fishery; and for sharks in the southeastern US Atlantic shark gillnet fishery. The goals of this plan are to assist in the recovery or to prevent the depletion of each strategic stock that interacts with a Category I or II fishery (as defined in Section 118 of the MMPA). The four year plan proposes two goals: a short term goal (by January 1998) that will achieve the necessary risk reduction within six months, and a long-term goal aimed at achieving a zero mortality rate (April 30, 2001). Some waters are completely exempted from this plan because of very rare occurrence of large whales in those areas (Appendix C).

Short-term measures:

- (1) Closures of critical habitat to some gear types during high use periods for right whales
 - * Sink gillnet closure, Cape Cod Bay critical habitat, January 1 through May 15; Great South Channel critical habitat (except west of Loran C 13710), April 1 through June 30
 - * Allow lobster gear with substantial modifications in Cape Cod Bay; Great South Channel critical habitat closed April 1 to June 30 unless the AA revises the closed period in accordance with paragraph (g) of the Federal Register Notice
- (2) A combination of closures and modifications of fishing gear and methods for the SEUS shark driftnet fishery
 - * Gillnet closure (except for strike nets) from Sebastian inlet, FL to Savannah GA out to 80°W longitude from November 15- March 31
 - * Restrictions on the way strike nets are set:
 - (a) no nets are set at night or when visibility is less than 500 yards (457.2 m),
 - (b) each set is made under the observation of a spotter plane,
 - (c) no net is set within 3 miles of a right, humpback or fin whale, and
 - (d) if a whale comes within 3 miles of set gear, the gear is removed from the water immediately.
- (3) Requiring lobster and anchored gillnet gear to be set without line floating at the surface
- (4) Requiring all lobster and anchored gillnet gear to have at least some characteristics that are likely to reduce the risk of entanglements,
- (5) Requiring drift gillnets in the mid-Atlantic be either tended or stored on board at night from November 1 to March 31.
- (6) Improving and expanding as necessary the network of persons trained in disentangling right whales
- (7) Prohibiting the storage of inactive gear in the ocean
- (8) Developing contingency plans in cooperation with States for what to do when right whales are present at unexpected times and places.

Long-term measures: The MMPA does not define how to calculate "Zero Mortality Rate Goal"(ZMRG). For the purpose of this BO, NMFS intends to interpret ZMRG to be 10% of the PBR level for each stock until a formal definition is established. However, once PBR is reached by the short term strategies, the Plan provides for a series of steps designed to facilitate continued reductions in entanglements:

- (1) Commitment to improve public involvement (TRT, GAG, outreach and educational workshops with fishermen)
- (2) Modification of take reduction gear technology lists to enhance gear requirements to reduce whale/fishing interactions
- (3) Continued improvement of the disentanglement network
- (4) Prohibiting wet storage of gear
- (5) Working with Canada to decrease entanglements
- (6) Facilitating gear modification research
- (7) Improving monitoring of right whale population distribution and biology
- (8) Expansion of the Early Warning Network system to year round and to other high use areas.
- (9) An abbreviated rule-making process to allow NMFS to change the requirements of this plan through a notice in the Federal Register.

The plan also calls for periodic review by the TRT to evaluate and improve reduction strategies.

Gear Advisory Group

One of the most significant strategies advocated by the TRT was the idea of gear modifications or gear development that would minimize or reduce the chance of serious injury or mortality should a large whale interact with a particular gear type. To deal with this complex issue, NMFS formed and convened a Gear Advisory Group (GAG) consisting of fisheries representatives, gear engineers, representatives of state government and conservation organizations which met June 4 and 5, 1997. The purpose of the GAG was to develop a plan that would minimize or reduce the likelihood of interaction with these fisheries, to prevent ongoing and existing information on gear research and to prioritize research needs for gear development. A report was subsequently prepared highlighting these activities. An update on gear studies was presented. Tension testing for modifications to lobster buoy attachments showed that crimped hog rings on a bight at the bitter end of the buoy line was promising as a reasonable weak link. Dry load testing has been done on gillnet webbing and the monofilament parted at loads of approximately 250 lbs. Inshore lobster gear hauling loads have undergone preliminary testing to measure tension between the davit and the block (75 - 775 lbs). However, this is not indicative of the load while hauling which is dependent on the angle at which the line passes over the block and therefore varies with the sea state and other factors. Further testing is necessary. Initial prototype work has been done on 400-450 plastic weak links, but a production run has not occurred due to costs. Teams were formed to discuss the nature of entanglements and how to reduce impacts. The report noted that a number of options are available for immediate implementation in the inshore lobster fishery and for gillnetters. In addition, a number of research and development priorities were developed for each team and these are provided in Appendix (B).

Gear Technology List

Following is the list of gear technology options provided in the Plan:

Lobster Take Reduction Technology List

1. Buoy lines are 7/16 inches in diameter or less,
2. Buoys are attached to the buoy line with a weak link having a maximum breakaway strength of 1100 pounds. Weak links may include swivels, plastic weak links, rope of appropriate diameter, hog rings, or rope stapled to a buoy stick.
3. For gear set in offshore lobster areas only, buoys are attached to the buoy line with a weak link having a maximum breakaway strength of 3780 pounds.
4. For gear set in offshore lobster areas only, buoys are attached to the buoy line by a section of rope no more than 3/4 the diameter of the buoy line.
5. Buoy lines are composed entirely of sinking line.
6. Ground lines are made of sinking rope.

Gillnet Take Reduction Technology List

1. Buoy lines are 7/16 inches in diameter or less,
2. Buoys are attached to the buoy line with a weak link having a maximum breakaway strength of 1100 pounds. Weak links may include swivels, plastic weak links, rope of appropriate diameter, hog rings, or rope stapled to a buoy stick.
3. Gear is anchored with the holding power of a 22 pound danforth-style anchor at each end,
4. Gear is anchored with a 50 pound dead weight at each end,
5. Nets are attached to a lead line weighing more than 100 pounds per 300 feet
6. Weak lines of 1,100 pound breaking strength are placed between net panels on the float rope.
7. Buoy lines are composed entirely of sinking line.

C. Listed Species that may be affected by implementation of the ALWTRP

Endangered Species

Northern Right Whale	<i>Eubalaena glacialis</i>
Humpback Whale	<i>Megaptera novaeangliae</i>
Sperm Whale	<i>Physeter macrocephalus</i>
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>
Green Sea Turtle	<i>Chelonia mydas</i>
Kemp's Ridley Sea Turtle	<i>Lepidochelys kempii</i>
Hawksbill Sea Turtle	<i>Eretmochelys imbricata</i>

Threatened Species

Loggerhead sea turtle	<i>Caretta caretta</i>
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Harbor porpoise (*Phocoena phocoena*) is proposed for listing as threatened and may occur in the areas covered by this action.

Critical Habitat Designations

Northern right whale	<i>Eubalaena glacialis</i>
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The areas designated as critical habitat for the Northern Right Whale include the following: the Great South Channel includes the area bounded by 41°40'N/69°45'W; 41°00'N/69°05'W; 41°38'N/68°13'W; and 42°10'N/68°31'W; the area designated as critical habitat in Cape Cod Bay/Massachusetts Bay includes the area bounded by 42°04.8'N/70°10'W; 42°12'N/70°15'W; 42°12'N/70°30'W; 41°46.8'N/70°30'W; and on the south and east by the interior shore line of Cape Cod, Massachusetts; and the area designated as critical habitat in the Southeastern United States includes waters between 31°15'N (approximately located at the mouth of the Altamaha River, Georgia and 30°15'N (approximately Jacksonville, Florida) from the shoreline out to 15 nautical miles offshore, and the waters between 30°15'N and 28°00'N (approximately Sebastian Inlet, FL) from the shoreline out to 5 nautical miles.

(1) General Biology and Distribution of Listed Species likely to be affected.

The general biology and distribution of the species listed in this consultation have been described in detail in the consultations previously referenced (USN, Mayport Operations (1997), USCG Vessel and Aircraft Operations (1996), American Lobster FMP (1996), Northeast Multispecies FMP (1996)). Since this represents the majority of the most recent information, it will not be repeated here. However, any recent information on species status not included in those discussions pertinent to the assessment of impacts for this consultation will be included below. In addition to the Biological Opinions, a Draft US Atlantic and Gulf of Mexico Marine Mammal Stock Assessment Report is available, although still under review, with the latest stock information on marine mammals and a five year "Status Review for Sea Turtles Listed under the ESA" (NMFS and USFWS, 1995) for updated information on sea turtles.

(a) New information on the North Atlantic right whale

All five of the Biological Opinions reinitiated in 1995-1997 were responding in part to the unusual northern right whale mortality event in 1995 and 1996. Given the extremely small population size, the agency was concerned that if measures were not taken to reduce the human induced serious injury and mortality of right whales that the population could not sustain itself, and certainly could not recover under the strain of such a mortality rate. After the winter of 1996 when the seven mortalities occurred (six off the southeastern calving grounds), analysis of the right whale sighting information showed that a large number of calves were produced in both 1996 and 1997. Scott Kraus, New England Aquarium, reported (Right Whale News-- May, 1997) that during the 1996-1997 calving season observers with the New England Aquarium, the Georgia Department of Natural Resources, the Florida Department of Environmental Protection and other groups recorded 18 right whale calves on the Georgia-Florida calving ground; this was the second highest number recorded since 1980. The 1995-1996 calving season observer reports showed 21 new calves. The third highest was 17 calves recorded during 1990-1991. Only one death was recorded during the 1996-1997 calving season--a neonate at Flagler Beach, which is not included in the 18 calves above. This single death is a remarkable improvement to the record high number of deaths in 1996 and to the 18 year average of 1.94 per year. Therefore, the 1990's have shown an improvement in the total number of calves produced, but a sufficiently detailed

assessment for this species is not yet available to provide an adequate explanation of the meaning of this observed trend in the context of population dynamics, and it is uncertain if the improvement is an artifact of increased observation over previous years.

It is also important to note that researchers are still concerned that the calving interval is increasing. Researchers determined that only 25% of the cows that should have been available to calve this season were observed to have given birth. Although it is equally important to note that while this trend could be connected to various human-induced environmental disturbances such as pollution or stress from other human activities (ocean exploration, explosives etc), it is a limiting factor on the population that is not a result of the fishing gear interaction problem that is the subject of this consultation.

D. Assessment of Impacts

(1) Large Whales

(a) Impacts from the plan and fisheries covered by the plan

Based on the requirements of the 1994 amendments to the MMPA, the actions and regulations contained in the ALWTRP, plus those to be taken under the upcoming Atlantic Offshore Cetacean Take Reduction Plan, will be sufficient to meet the short term goal of reducing serious injury and mortality of large whales to below the PBR level for those species covered by the Plan. This plan is expected to achieve the necessary take reductions within six months through the measures listed earlier and for the reasons listed below. Since PBR is a mortality threshold above which the population is expected to be able to recover to a level of maximum net productivity, it is inherently implied that this level is at or above the level required to maintain sustainability and recovery of endangered species as prescribed in the ESA. However, while PBR takes into account all human-caused mortality, the take reduction strategies addressed by the TRT process, as mandated by the MMPA, are for fishing related mortality only. Therefore, if the components of the ALWTRP do reach the PBR threshold, then it may also be adequate to remove the threat of jeopardy from the lobster, multispecies and shark fisheries, as long as the other cumulative factors that make up the environmental baseline that must be considered in ESA determinations do not change that determination.

Closure strategy. Right whales are typically found in the Cape Cod Bay critical habitat from January 1 through May 15 and in the Great South Channel critical habitat from April 1 through June 30. As established in emergency rule-making implemented in April 1997, the LWTRP interim rule closes the Cape Cod Bay critical habitat to sink gillnet fishing during the high right whale use period (January 1 through May 15). Lobster gear in that area will be allowed but will have to be substantially modified to minimize the risk of entangling right whales. Lobster Gear will be prohibited during the high right whale use months in the Great South Channel (April 1 through June 30), most of which will also be closed to gillnet fishing. Although not allowing lobster pot gear in the area west of the Loran C 13710 line from April 1 through June 30 may

appear inconsistent with what NMFS proposes for sink gillnet gear in this area, lobster pot gear poses a greater threat to right whales than does sink gillnet gear in this area. The offshore location generally requires that gillnetters tend their gear, whereas lobster pot gear in this area is often not checked for extended periods - especially if there is bad weather.

In the southeast, right whales are present on the calving grounds from November through March. Therefore, an area from Sebastian Inlet, FL to Savannah, GA out to 80° W longitude will be closed to all shark driftnet fishing, except for strike netting, each year from November 15 through March 31. This closed area includes the southeastern US right whale critical habitat, which is a nursery area for mothers and calves. Strike netting in southeast waters will be permitted during the high risk period only if: (1) no nets are set at night or when visibility is less than 500 yards (457.2 m), (2) each set is made under the observation of a spotter plane, (3) no net is set within 3 miles of a right, humpback or fin whale, and (4) if a whale comes within 3 miles of set gear, the gear is removed from the water immediately. All of these measures will minimize the risk of entangling any large whale.

As stated, the Great South Channel critical habitat will be closed to lobster pot gear during the high right whale use period (April 1 through June 30), but gear modifications will be required in the Cape Cod Bay critical habitat during January 1 through May 15 period. The rationale for this difference is that there is a higher likelihood that an entangled whale in Cape Cod Bay will be sighted and reported, due to the high level of vessel traffic and more research efforts in this area. Potential whale entanglements in Cape Cod Bay are considered more likely to be observed and reported to the disentanglement network. In addition, the disentanglement efforts may be more effective in reducing the potential for serious injuries and mortalities in these relatively shallow, near-shore waters than in offshore waters. The Great South Channel critical habitat is further offshore and little whale watching or survey effort exists there. The likelihood of observing an entangled whale offshore is lower, and offshore disentanglement efforts are subject to greater logistical impediments.

Since historical data allows NMFS to predict where some of the right whales will be concentrated during certain times of the year, it is clear that the closures or significant measures to modify gear discussed above will decrease the overall potential for entanglement. However, although NMFS can predict where some right whales will be found at some times of the year, right whales have been sighted in virtually all coastal and offshore waters from Florida to Maine. Generally these sightings are of small, transient groups or individuals. On occasion, larger groups of right whales are resident at times and in locations that are unexpected, including times when large amounts of fishing gear may be deployed in the area. Under these circumstances, the risk of entanglement, as in the known concentration areas, is higher. For example, all right whale entanglements in US lobster gear where the location was known occurred either outside critical habitat or outside the peak season in critical habitat. A number of ways to decrease that risk, other than wholesale closures, are being developed, including continuous monitoring of the whales' movements to alert a disentanglement team immediately in the event that a whale happens to get entangled. NMFS is working with States and fishermen's associations to develop quick

response networks to these unusual right whale distribution patterns.

Gear modification strategy. The ALWTRP rule also requires that all lobster and anchored gillnet gear be rigged in such a way as to prevent the buoy line from floating at the surface at any time. All large whales are vulnerable to entanglement in any line floating on the surface of the water. Right whales are particularly vulnerable to this entanglement threat, since they are known to "skim feed" by swimming slowly at the surface with their mouths open. This measure does not address the risk of entanglement below the surface. However, sinking ground line or buoy lines have a potential for success in some areas, but would not be effective in rocky bottoms. Since fishing conditions and practices differ widely throughout the range of this plan, uniform applications of gear requirements is not practical. Instead, this issue is addressed through the gear menu process (see below) and through the TRT and GAG.

This plan establishes lists of gear characteristics (provided earlier) that are expected to decrease the risks of entanglement. Lobster gear and anchored gillnet gear used in low risk areas will be required to have at least one of the characteristics. Similar gear set in high risk areas are required to have at least two of these characteristics. The lists are based on public comments and the recommendations of the Gear Advisory Group and reflect the best current general fishing practices. In other words, many fishermen are currently fishing successfully with gear in this configuration, but some are not. Therefore, this will bring all fishermen up to at least this level without severe hardships. The gear is known to be able to fish properly, maintain stability in the water, and is the least likely of current fishing practices to cause impacts to whales. Since other gear modifications are still under development this represents the best take reduction strategy currently available in the realm of gear modifications. Most fishermen will be in compliance with the current list without changes to their gear. Some fishermen will have to modify their gear to comply with this regulation, hence there will be a small immediate risk reduction from this requirement. The main purpose of this measure is to initiate a flexible process of gear modification over the next four years (see discussion under "steps to achieve ZMRG" below). There are slightly different lists for inshore and offshore lobster fisheries because of the much heavier gear requirements for fishing offshore. Because inshore and offshore lobster gear have different requirements, NMFS will require that the gears be marked differently as well.

The ALWTRP rule also requires that mid-Atlantic drift gillnet gear be either removed from the water each night or be attached to the vessel. The purpose of this measure is to reduce the chances that a whale will encounter gear that is not anchored. This provision will be in effect from November 1 through March 31 of each year, during the time when whales, primarily right and humpback whales, are expected to be migrating through the mid-Atlantic.

Disentanglement strategy. Disentangling a whale can reduce the seriousness of an injury or prevent death due to entanglement. NMFS continues to commit funds to support and improve the disentanglement effort to help meet both the six month and the long-term goal. Increased awareness and cooperation amongst fishermen, agencies and organizations has already led to the successful disentanglement of a right whale on June 24, 1997, off of Chatham, MA. The Team

was able to disentangle the whale and it swam free of gear, apparently in good health, although often the long-term effects of an entanglement cannot be predicted.

In addition to the regularly funded disentanglement team in the Gulf of Maine (headed by the Center for Coastal Studies), disentanglement efforts have been initiated outside New England waters. NMFS will continue to work with the disentanglement network to form local "first response" teams which can respond to entanglements in other areas and of other species prior to (or in some cases in lieu of) dispatching the disentanglement teams. NMFS is also funding and/or working cooperatively with other groups to expand the current survey effort to better monitor at-risk areas. These surveys will increase opportunities for sighting entangled whales, respond to unusual events, as well as warning ships of the presence of right whales in an area. While it may be difficult to reduce the threat of entanglements to zero, this particular element of the plan is imperative to insure that if such an event occurs, the whale is released unharmed or with only minor injury that does not inhibit its ability to thrive.

Miscellaneous strategies. One of the factors that has been mentioned as contributing to entanglement risk is "ghost" fishing gear that has been lost and abandoned. Requiring fishermen to remove "ghost" or unused gear from the water when they find it will also help reduce the risk of entanglement. This rule contains a prohibition on "wet storage" of lobster gear--the practice of storing gear in the water--through a requirement that gear be hauled at least every thirty days, and prohibition of gear discard. Other rules prohibit discard of gear and we are working with the Coast Guard and states to enforce them. This is expected to further decrease entanglement hazards for large whales.

(b) Impacts from fishery management actions

Other measures, as previously outlined, that are expected to decrease the risk of entanglement of whales in sink gillnets are either currently in effect or under consideration. Reductions in allowable days at sea and seasonal or year-round area closures to protect groundfish will also reduce the risk of entangling right whales and other large whales. Additionally, area closures for harbor porpoise conservation are in effect for Massachusetts Bay, the Gulf of Maine "mid-coast" and "northeast" areas, and southern New England. With the exception of the harbor porpoise closure in southern New England, all of these closures coincide with times that right, humpback and fin whales are also present in the area, further decreasing the likelihood of entanglement. Effort reduction measures under Framework Adjustment 23 to the Northeast Multispecies Fishery Management Plan are expected to reduce total sink gillnet effort by 50 to 80 percent. This measure is expected to also reduce the risk of large whale entanglement associated with this gear.

New England sink gillnetters that fish "day trips" are now limited in the number of nets they can set. This limit will further reduce the risk of entanglement of right whales in sink gillnet gear by reducing the amount of gear in the water that is not tended. Offshore gear is required to be tended by gillnet fishermen, which will also reduce entanglement risks. Amendment 7 to the northeast Multispecies regulations, now in its second year, has further reduced days at sea for

multispecies vessels including gillnetters to 88 days beginning May 1, 1997, again reducing the amount the gear.

Some level of lobster pot gear effort reduction may occur under gear conflict management measures such as those implemented by the NMFS in accordance with recommendations of the NEFMC in southern New England. Gear conflict reduction measures are also expected to decrease the amount of lost gear, which should reduce the risk that whales would become entangled in "ghost" gear. Further, the Atlantic States Marine Fisheries Commission is currently considering reducing effort in the lobster fishery. Any effort reduction measures implemented for the lobster fishery are likely to reduce the risk of entanglement of whales in that gear.

(c) Changes in the environmental baseline

The answer to whether the ALWTRP components themselves, or the continued operation of these fisheries under the requirements of the ALWTRP and under the existing fishery management regime, will jeopardize the continued existence of endangered large whales hinges in part on what has happened since previous determinations of jeopardy. In addition, in evaluating whether these actions themselves (and related impacts as discussed above), in combination with all other pressures on the population, will jeopardize the species, it is necessary to evaluate whether progress has been made in reducing the second largest mortality/serious injury factor to large whales-- ship strikes.

Managing risks for endangered populations from human related impacts requires the realization that there is never zero risk (Burgman et al., 1996). Although the existing Biological Opinions and the ALWTRP define and consider alternatives to these actions to reduce risk, we can never guarantee that these actions will result in survival and recovery of a species. The ALWTRP reflects the collective opinions of the best experts on the species and the best experts in the fishery currently available. Implementation of certain elements of this plan will reduce the level of serious injury and mortality from fishing gear to below the potential biological removal level (a mortality threshold) for these species. In addition, the ALWTRT will continue to monitor the effectiveness of the plan and continue developmental work to produce even better strategies in the future. While there was not complete consensus on the entire plan, NMFS has developed this rule based on those elements that were most promising. This means, in theory, that under this scheme the population should not only be able to sustain itself at current levels, but should provide for recovery towards a net productivity level.

Previous determinations.....

With regard to the effect determinations previously made for certain fisheries because of a history of northern right whale entanglements, the ESA requires that R&PA of jeopardy opinions provide alternative actions that will avoid the likelihood of jeopardizing the continued existence of the listed species or result in the destruction or adverse modification of critical habitat. Therefore, implementation of the R&PA of the USCG, Multispecies, Lobster, and Atlantic Pelagic Fishery consultations, and implementation of the mitigative measures in the USN operational plan for

Mayport and the USCG ALMR initiative, would be expected to reduce the threat of adverse impacts to the northern right whale to below the jeopardy level for each of those actions. No information is currently available that changes the basis for those determinations.

Further, two of these consultations focussed the R&PA's on the immediate jeopardy threat in whale high use areas and instituted closures in critical areas. The ALWTRP retained the two immediate measures (closures) that were R&PA of the Biological Opinions as necessary take reduction strategies, but added additional measures necessary to maintain confidence that the threat of entanglement would continue to be reduced. These measures are primarily in the form of gear requirements that are expected to decrease the likelihood that if a whale does interact with the gear, no serious injury will result. The gear development process will be ongoing and is expected to continually improve. Increased surveillance and monitoring capabilities are expected to act as both a warning system when whales are concentrated in certain areas and as a mechanism to more quickly sight and respond with disentanglement teams to reduce the threat of serious injury or mortality, if the rare entanglement event should occur despite these efforts.

In addition, through some conservation measures, specifically gear modifications, disentanglements, unusual event response, etc., in the ALWTRP are also aimed at high use areas for humpback and finback whales (Stellwagen Bank and Jeffreys Ledge).

Ship strikes...

Significant progress has been made since the five Biological Opinions (previously mentioned) were issued, to address the ship strike problem. As discussed, two significant contributors to vessel traffic, the USCG and the USN, have made substantial modifications to their vessel operations to avoid impacts to whales, including moving operations outside of critical areas, maintaining constant lookouts specifically for whales, reducing speeds when possible, and reporting sightings information, including any possible entanglements. In addition, they are responsible for posting notices to other mariners to avoid whale concentration areas and for cautioning those vessels to reduce speed in the presence of whales. In addition, the USCG provides educational material to mariners about safe operation of vessels around whales. The wheelhouse cards that NMFS provides to licensed fishermen will be provided to the commercial shipping industry. All these efforts reduce the potential of vessel strikes below the levels that were encountered prior to 1995. In addition to the USCG efforts to educate the general boater, workshops that involve the participation of port agents and commercial vessel associations and operators in both the southeast and the northeast as a result of efforts of the SEUS IT and the NEWRPIT, are educating these vessel operators on the importance of protecting whales and providing them with operational guidelines and information resources (where to find the latest sighting information from the various networks) to do this effectively. The EPA and NOAA Corps have both initiated consultations on their vessel operations so that they can implement similar measures in their fleets. NOAA Corps has already incorporated the right whale 500 yd. approach regulations into a NOAA directive to their fleets.

It is evident from the foregoing discussion that considerable progress has been made since

previous jeopardy decisions based on the cumulative human-induced impacts on the right whale population, to decrease the probability that a vessel strike will occur. This improvement is expected to continue with increased research and outreach efforts. As mentioned, work is currently in progress to assess ship traffic in high risk areas, ship modeling studies, whale detectability studies, and acoustical tools that might serve to alert whales to the presence of vessels, to name a few. In addition, international tools (including discussions with the International Maritime Organization) are being researched to address the education and control of foreign vessel traffic that enters high use areas.

It is clear that due to the efforts of NMFS, the scientific community, the shipping community, various other federal agencies (USCG, USN, COE, EPA, NMS), and state agencies (Departments of Marine Resources, Coastal Zone Management, Enforcement), the presence of right whales up and down the entire Atlantic coast and the need for their protection, particularly through operational modifications for vessels, is becoming well-known. The early warning networks protect the species through intense scrutiny of their movements in the most critical areas (northeastern and southeastern critical habitats). While much more still needs to be done, it is safe to say that progress has been made and some potential collisions have been prevented.

and other mortality factors.... The true impact of genetics (i.e. genetic inbreeding depression) on the survivability and recovery of the northern right whale population is unknown, although the longer calving interval mentioned earlier may be related to this problem. Also unknown is the impact that pollution is having on resources available to this species or whether it is slowly compromising overall health. All these factors, among a host of others, such as density dependence, habitat loss, environmental changes, social dysfunction at low densities, demographic accidents, and competition, which affect the success of rare species (Burgman et al. 1996) most likely have some level of effect on this population. However, the indirect effects of these factors are much more difficult to quantify than the more highly visible mortality factors, like vessel strikes and fishing gear entanglements, and they are much more difficult to manage. Therefore we may tend to overestimate the contribution of the visible sources to the overall population condition. It is important to realize that all the facets that constitute the cause of a species decline should be looked at, not just the most visible ones. Individual examples of the failure of approaches that focussed too narrowly on one impact and ignored the effect of others are the management plans of the northern spotted owl (*Strix occidentalis caurina*) and the red-cockaded woodpecker (*Picoides borealis*), which were based primarily on population genetics, ignoring basic demographic factors; this resulted in failed management strategies (Gaston, 1994)). In addition, it is important to realize that the habitat this species occupies cannot, in many ways, be restored to what it may have been when right whale numbers were much higher. It is within this context that the question of whether the population is truly in a decline, given the carrying capacity of the current environment, needs to be assessed.

(d) Critical Habitat

The assessment of impacts to critical habitat must include an analysis of the effects to the essential

features of critical habitat, regardless of the presence of the species at the time of impacts. Essential features are those essential for the conservation of the species and which may require special management considerations. Essential habitat for right whales is used for foraging, breeding and nursing. The components of the ALWTRP will have no adverse impacts on critical habitat, but will have a beneficial impact because closures and gear modifications during the high use periods insure that whale use of the areas will not be inhibited by gear. Neither the ALWTRP or the gear itself is expected to have any adverse impacts on the actual features of the habitat itself (for ex. plankton blooms).

Sea Turtles

No new information has become available to change the basis for the determination made for sea turtles in the previously mentioned Biological Opinions on the continued operations of the fisheries considered by the ALWTRP. Therefore, these Biological Opinions are incorporated by reference herein in their entirety, including all the incidental take statement requirements and conservation recommendations. In addition, some of the measures prescribed by the ALWTRP may have a marginally beneficial effect for sea turtles in that some effort reduction will occur in areas where sea turtles are present, thus reducing the threat of entanglements in gillnets and lobster gear in those areas. Since the gear modifications are specifically designed for whales with a much larger body mass, it is unlikely that any of these measures will reduce the sea turtle take problem.

E. Cumulative Effects

"Cumulative effects" are defined in 50 CFR §402.02 as those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation.

Cumulative impacts from unrelated, non-federal actions occurring in the northwest Atlantic may affect sea turtles, marine mammals, and their habitats. Stranding data indicate marine mammals and sea turtles in Atlantic waters die of various natural causes, including cold stunning (in the case of sea turtles), and other human activities, such as incidental capture in fisheries, ingestion or entanglement in debris, vessel strikes, and degradation of nesting habitat. The cause of death of most marine mammals and turtles recovered by the stranding network is unknown. In waters of many Atlantic states, state-permitted coastal gillnetting may affect listed sea turtles and marine mammals.

Commercial and private vessels may affect humpback, fin and right whales, and all species of sea turtles. As a point of reference, commercial shipping traffic in Massachusetts Bay is estimated at 1200 ship crossings per year with an average of three per day. About 20 whale watch companies representing 40-50 boats conduct several thousand trips from April to September, with the majority of effort in the summer season. More than 280 commercial vessels fish on Stellwagen Bank. Sportfishing contributes more than 20 vessels per day from May to September. In

addition, an unknown number of private recreational boaters frequent Massachusetts and Cape Cod Bays. Massachusetts waters occupy only a small portion of the range of these species, so the potential traffic they are subjected to over their entire range along the western N. Atlantic is substantial. It is possible that the combination of these activities may cause sublethal effects to protected species that could prevent or slow a species' recovery.

Recent work done in the mid-Atlantic area (between Chesapeake Bay, Virginia, and Cape Hatteras, North Carolina) on causes of mortality in humpback whales (Wiley *et al.*, 1995) showed that 30% of the stranded individuals, where the cause of death was determinable, was attributed to vessel strikes; 25% had injuries consistent with entanglement in fishing gear. This indicates that vessel interactions are also having an impact along this portion of the coast. Because most of the whales involved in these interactions are juveniles, it adds to the perception that areas of concentration for young or newborn animals are particularly important to protect.

Generally, right whales and humpback whales do not use southeastern waters for feeding. Therefore, most of the effects from pollution would be expected in the northern summer feeding areas for these species. However, sea turtles nest primarily in the southeastern United States, and early life stages and breeding individuals of these species are likely to be impacted by pollution. Necropsies of hatchlings and juveniles show that young turtles commonly consume tar balls (STSSN stranding data base).

In feeding areas of the northeast such as the Massachusetts Bay area, the dominant circulation patterns make it probable that pollutant inputs into Massachusetts Bay will affect Cape Cod Bay's right whale critical habitat. Disposal operations at the Massachusetts Bay Disposal Site (MBDS) and Cape Cod Bay Disposal Site are currently being monitored for ecosystem effects. Barrels at the historic Industrial Waste Site containing low level radioactive waste, located two nautical miles west of the Massachusetts Bay Disposal Site, may affect water quality. Impacts of barrel seepage or release of chemicals due to severe weather conditions or impacts by fishing gear are unquantified.

Other contributors of pollutants in the Massachusetts and Cape Cod Bays include atmospheric loading of pollutants such as PCBs, storm water runoff from Massachusetts coastal towns, cities and villages, runoff into rivers emptying into the bays, groundwater discharges and river input and runoff from Gulf of Maine waters. The Massachusetts Water Resources Authority will be conducting an extensive monitoring program of their proposed outfall to evaluate the future contribution of that source to ecological effects on Cape Cod and Massachusetts Bays. Nutrient loadings from Cape Cod and Plymouth communities stimulate nearshore spring blooms similar to those observed near Boston Harbor.

Large commercial vessels, fixed fishing gear, and dredging activities are prevalent along the entire western Atlantic coastline. All the protected species considered in this consultation have been impacted by vessel traffic and fishing gear. These are probably the two most significant impacts on right whales and humpback whales, while fishery interactions and dredging activities are the

most problematic for sea turtles.

The combination of all these activities may cause effects to protected species that could prevent or slow a species' recovery. Designation of critical habitat, proactive approaches by other federal agencies (i.e. the COE has limited dredging in southeastern channels to periods when turtles are not concentrated in the channels), participation by federal agencies in recovery plan implementation activities and the section 7 process all contribute to mitigating these potential cumulative effects.

F. Conclusion

NMFS concludes that implementation of the ALWTRP and continued operation of fisheries conducted under the American Lobster and northeast Multispecies FMPs, and southeastern shark gillnet component of the Shark FMP, may adversely affect, but are not likely to jeopardize the continued existence of any listed species of large whales or sea turtles under NMFS jurisdiction. This conclusion is based on the current environmental baseline, implementation of the plan components and the R&PA of past opinions, and proposed programs, that minimize the possibility of entanglement that leads to serious injury or mortality of large whales. This does not change the conclusion of previous determinations of impacts of these fisheries on sea turtles.

G. Reinitiation of Consultation

Reinitiation of formal consultation is required if: (1) the amount or extent of taking specified in the incidental take statement is exceeded; (2) new information reveals effects of the action that may affect listed species or critical habitat (when designated) in a manner or to an extent not previously considered, (3) the identified action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in the biological opinion (e.g., if the measures outlined in the proposed activity are not implemented or are modified in a manner that results in increased risks to endangered or threatened species); or (4) a new species is listed or critical habitat designated that may be affected by the identified action.

H. Conservation Recommendations

1. The continued success of efforts to reduce the risk of entanglements is dependent on continued monitoring of the effectiveness of the proposed regulations and the population itself. Federal agencies should continue to support research efforts that will develop better gear modifications/improvements that further reduce the threat that an entanglement will result in serious injury or a mortality.
2. NMFS should continue to improve the disentanglement network so that a response can be made along the entire Atlantic coast where the threat of large whale entanglement exists. It is recognized that these efforts will not be practical in many offshore locations.

3. It is critical that NMFS speed up efforts to develop the models, as required by the R&PA of the lobster and multispecies Biological Opinions previously issued, to enable managers to predict shifts in fishing effort in relation to whale habitat areas and consequently enable them to adjust protection measures as required.

4. Public education and outreach efforts should be increased, not only to explain the components of the take reduction strategy itself, but to educate the public on other factors, such as vessel traffic, contributing to the precarious status of the critically endangered right whale.

5. Research needs to be expanded into ship detection or acoustical warning systems that show promise for continuing to alleviate the threat of ship strikes.

6. Research needs to address the cumulative ecosystem impacts on the right whale population that will lead to better means of assessing risk to the depleted right whale and will potentially lead to development of better management tools .

Incidental Take Statement

Section 7(b)(4) of the Endangered Species Act (ESA) requires that when a proposed agency action is found to be consistent with section 7(a)(2) of the ESA, and the proposed action may incidentally take individuals of listed species, NMFS will issue a statement that specifies the impact of any incidental taking of endangered or threatened species. It also states that reasonable and prudent measures, and terms and conditions to implement the measures, be provided that are necessary to minimize such impacts. Only incidental taking resulting from the agency action, including incidental takings caused by activities approved by the agency, that are identified in this statement and that comply with the specified reasonable and prudent alternatives, and terms and conditions, are exempt from the takings prohibition of section 9(a), pursuant to section 7(o)(2) of the ESA.

Marine mammals

Section 7(b)(4)(c) of the ESA specifies that in order to provide an incidental take statement for an endangered or threatened species of marine mammal, the taking must be authorized under section 101(a)(5) of the Marine Mammal Protection Act of 1972 (MMPA). Since no incidental take has been authorized under section 101(a)(5) of the MMPA, no statement on incidental take of endangered whales is provided and no take is authorized.

Sea turtles

See existing Biological Opinions on incidental take allowance for sea turtles in the lobster, multispecies and shark fisheries; no incidental take allowance is required for implementation of the ALWTRP because no takes in addition to those considered in the operation of the fisheries are anticipated.

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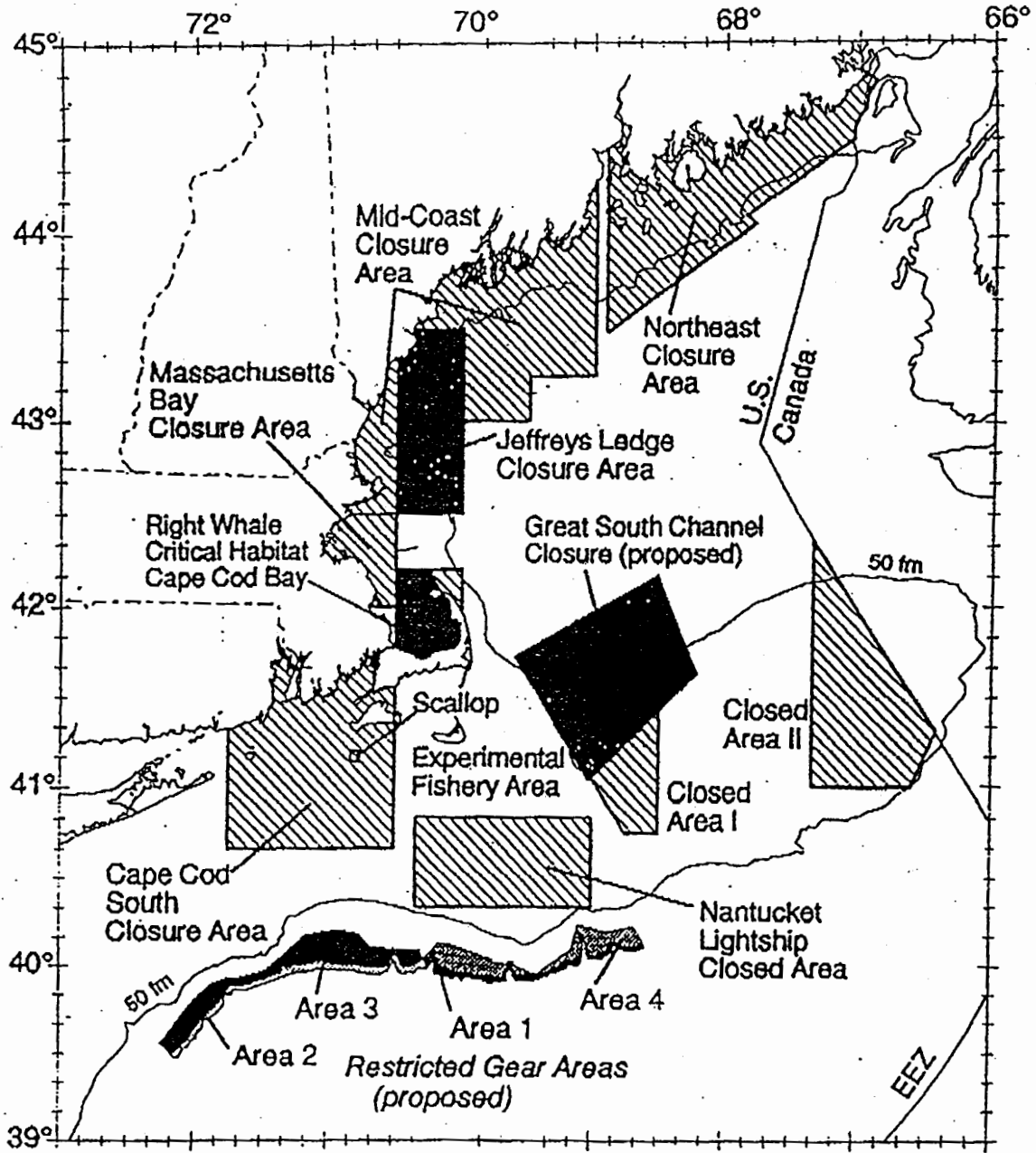
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APPENDIX A



Closed Areas in the Northeast Region

NEFSC
GIS Lab/DMS



National Oceanic and Atmospheric Administration
 National Marine Fisheries Service
 Northeast Fisheries Science Center
 Woods Hole, MA

APPENDIX B

Research and Development Priorities Inshore Lobster Team

1. Breakaway buoy (weak link @ buoy)
 - Minimum 1 year testing
 - Ocean development
2. Operational load testing
3. Whale behavior around gear
4. Test pulling lines through baleen of dead whales
5. Whale movements/tracking, including depth
6. Discarded / ghost gear recovery
 - e.g. by a buy-back boat
7. Dockside gear recycling
8. Whale behavior / line color
9. Study line profile / kinetics
10. Neutrally buoyant rope
11. Groundline profile w/different trap spacing
12. Whale population studies, including genetics and differences in vital rates
13. Tag lines, messenger system
14. Gear identification panel
15. Develop line splicing tool

Research and Development Priorities Gillnet Team

- weak links between bridles
- heavier or lighter float line
- heavier or lighter lead line
- longer end line from the end net to the anchor
- net height
- setting patterns
- twine strengths
- acoustic devices
- tended vs. untended gear
- coloring mesh - brighter {more visible} colors -- colored rope i.e. florescent
- whale behavior - why & how interact with gear
- hauling strengths - what does it takes to haul gear back
- "slippery" rope for use on end lines
- edible rope
- quick splice - Chinese splice
- whale repellent coated gear
- lippo soluble line

APPENDIX B (Continued)

Research and Development Priorities Offshore Lobster Team

- Passage of an offshore lobster FMP that will have an effort reduction component.
- Address the gear conflict issue to reduce "ghost gear".
- Develop a gear marking system.
- Do some strain testing on gear to determine weak link strength requirements.
- Develop a weak link system that is knot-free and can accommodate the strains found in the Fishery.
- Research "slippery rope" to facilitate disentanglements.
- Research "noisy rope" to make the whales more aware of the gear.

APPENDIX C

BOUNDARY LINES FOR EXEMPTIONS

Maine and New Hampshire:

44° 49.52'N 66° 56.10'W TO 44° 48.90'N 66° 57.00'W The Boring Stone to West Quoddy Head
44° 38.60'N 67° 11.50'W TO 44° 36.26'N 67° 15.70'W Western Head to Double Head Shot Is.
44° 36.26'N 67° 15.70'W TO 44° 27.80'N 67° 32.85'W Double Head Shot Is. to Freeman Rk.
44° 27.80'N 67° 32.85'W TO 44° 26.48'N 67° 36.00'W Freeman Rk. to Crumple I.
44° 26.48'N 67° 36.00'W TO 44° 21.75'N 67° 52.85'W Crumple I. to Petit Manan I.
44° 21.75'N 67° 52.85'W TO 44° 19.60'N 68° 03.00'W Petit Manan I. to Schoodie I.
44° 19.60'N 68° 03.00'W TO 44° 14.40'N 68° 11.55'W Schoodie I. to Baker I.
44° 14.15'N 68° 11.90'W TO 44° 13.25'N 68° 20.20'W Baker I. to Bass Harbor Head
44° 13.25'N 68° 20.20'W TO 44° 13.71'N 68° 28.31'W Bass Harbor Head to Pond I.
44° 13.21'N 68° 29.44'W TO 44° 10.48'N 68° 35.80'W Pond I. to Sheep I.
44° 10.48'N 68° 35.80'W TO 44° 08.80'N 68° 40.80'W Sheep I. to Moose I.
44° 08.80'N 68° 40.80'W TO 44° 02.25'N 68° 48.25'W Moose I. to Vinalhaven I.
44° 02.10'N 68° 48.40'W TO 43° 51.25'N 69° 17.10'W Vinalhaven I. to Burnt I.
43° 51.25'N 69° 17.10'W TO 43° 48.15'N 69° 35.90'W Burnt I. to Ram I.
43° 48.15'N 69° 35.90'W TO 43° 42.94'N 69° 51.00'W Ram I. to Small Pt.
43° 42.94'N 69° 51.00'W TO 43° 33.47'N 70° 12.35'W Small Pt. to Cape Elizabeth
43° 33.47'N 70° 12.35'W TO 43° 21.90'N 70° 24.90'W Cape Elizabeth to Cape Porpoise

Rhode Island

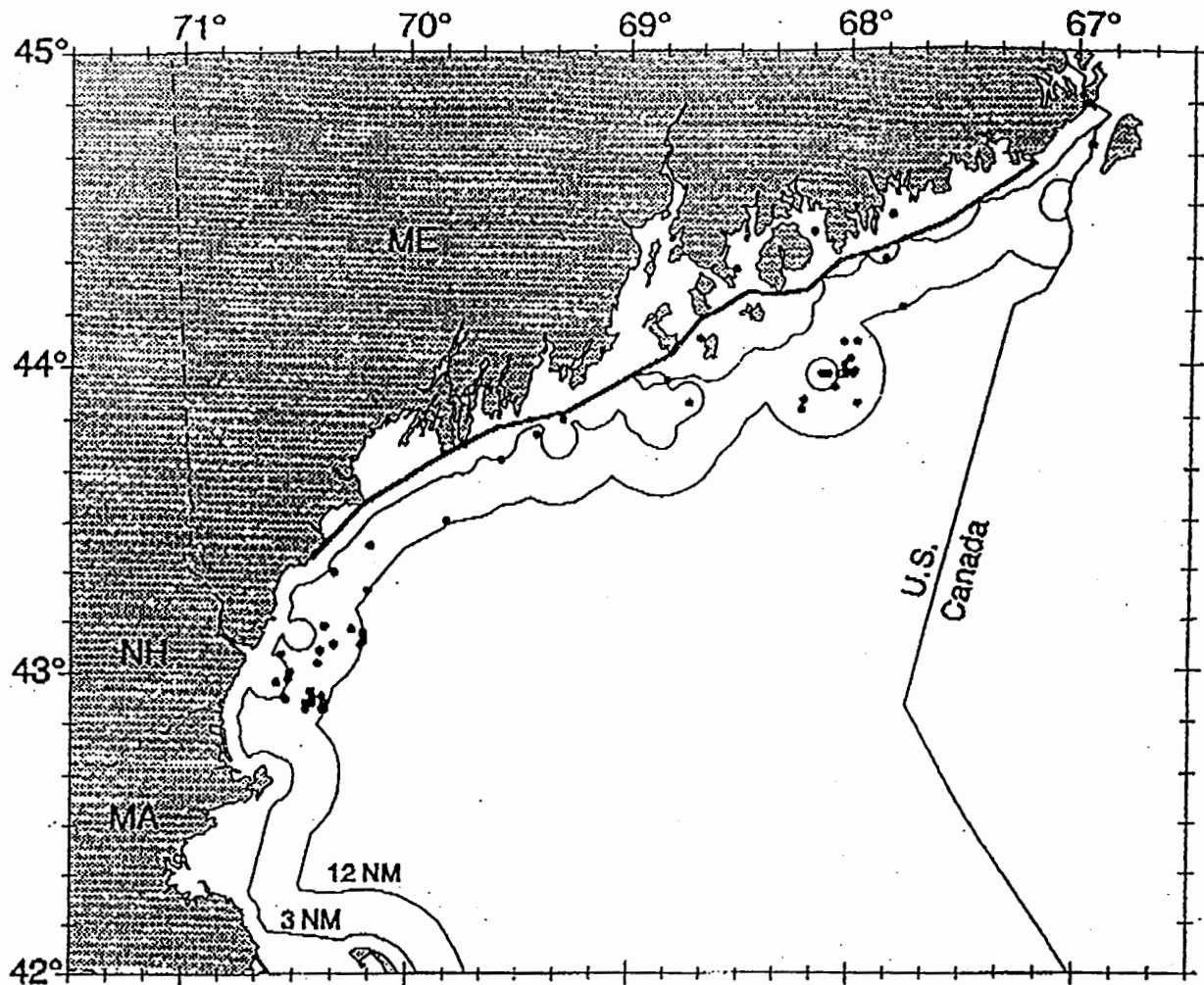
41° 22.41'N 71° 30.80'W TO 41° 22.41'N 71° 30.85'W Pt. Judith Pond Inlet
41° 21.31'N 71° 38.30'W TO 41° 21.30'N 71° 38.33'W Ninigret Pond Inlet
41° 20.00'N 71° 43.08'W TO 41° 20.00'N 71° 43.10'W Quonochontaug Pond Inlet

New York

Long Island Sound

West of the line from the Northern fork of the eastern end of Long Island, NY (Orient Pt.) to Plum Island to Fisher's Island to Watch Hill, RI.

41° 11.40'N 72° 09.70'W TO 41° 04.50'N 71° 51.60'W Gardiners Bay
40° 50.30'N 72° 28.50'W TO 40° 50.36'N 72° 28.67'W Shinnecock Bay Inlet
40° 45.70'N 72° 45.15'W TO 40° 45.72'N 72° 45.30'W Moriches Bay Inlet
40° 37.32'N 73° 18.40'W TO 40° 38.00'N 73° 18.56'W Fire Island Inlet
40° 34.85'N 73° 34.55'W TO 40° 35.08'N 73° 35.22'W Jones Inlet



**Maine Exempt Waters
Right Whales inside 12 Nautical Miles**



**National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Northeast Regional Office
Gloucester, MA**